
New Combinations and Nomenclatural Notes on the Genera *Salacia* and *Tontelea* (Celastraceae, Sensu Lato) in the Neotropics. V.

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ABSTRACT. The increase in collections of Hippocrateaceae, in particular from Andean regions, has led to several taxonomic and nomenclatural changes in the genera *Salacia* and *Tontelea*. Miers's *Thermophila cordata* is reestablished as *Salacia cordata*; *S. acreana* and *S. megistophylla* are considered to be synonyms. *Salacia pittieriana* is placed in synonymy with *S. multiflora*. *Salacia mucronata* is treated as a subspecies of *S. multiflora*. *Tontelea richardii* is considered as a subspecies of *T. ovalifolia*, and *T. fluminensis* placed in synonymy with the latter species. Other changes in *Tontelea* concern the transfer of *T. ulei* to *Salacia ulei*. Krukoff 5141, the type of Smith's *Salacia petiolata*, later transferred by him to *Tontelea ulei*, is treated here as *T. petiolata*.

Salacia cordata (Miers) A. M. Mennega, comb. nov. Basionym: *Thermophila cordata* Miers, Trans. Linn. Soc. London 28: 401. 1872. TYPE: Peru. Pavón s.n. (holotype, BM; isotype, G).

Salacia acreana A. C. Smith, Bull. Torrey Bot. Club 66: 243. 1939. Syn. nov. TYPE: Brazil. Acre: Krukoff 5523 (holotype, NY; isotypes, A, F, MICH, S, U, US).

Salacia megistophylla Standl., Publ. Field Mus. Nat. Hist. Bot. Ser. 4: 222. 1929. Syn. nov. TYPE: Panama. Bocas del Toro: Crica Mola Valley, Cooper 503 (holotype, F).

In 1872, Miers came across a Pavón collection in the British Museum which, despite the lack of flowers on the inflorescence, he recognized as belonging to the Hippocrateaceae. He placed it in the genus *Thermophila* and named it *T. cordata* Miers, which he considered closely related to *T. macrophylla* Miers (= *Salacia miqueliana* Loes.).

I studied additional material of the Pavón collection in the herbarium at Geneva. These sheets also lack flowers, but they have the same characteristic large leaves with a more or less cordate base and a rather short, several-branched inflorescence. I support Miers' opinion that the Pavón material represents a good species, despite the absence of flowers.

Because *Thermophila* is now placed in synonymy with *Salacia*, this species is here named *Salacia cordata* (Miers) A. M. Mennega.

Salacia multiflora (Lam.) DC. Prodr. 1: 570. 1824. Basionym: *Hippocratea multiflora* Lam. Tab. Encycl. 1: 101. 1791. TYPE: French Guiana. Richard s.n. (holotype, P).

Salacia pittieriana A. C. Smith, Brittonia 3: 440. 1940. Syn. nov. TYPE: Venezuela. Aragua: Parque Nacional, L. Williams 10332 (holotype, F; isotype, US).

Salacia multiflora subsp. ***mucronata*** (Rusby) A. M. Mennega, comb. nov. Basionym: *Salacia mucronata* Rusby, Descr. S. Amer. Pl. 53. 1920. TYPE: Venezuela. Delta Amacuro: lower Río Orinoco, Rusby & Squires 130 pro parte (holotype, NY; isotypes, A, F, G, GH, MICH, US).

In his treatment of *Salacia*, Smith (1940) recognized a number of species groups, two of which are closely related: *Multiflorae*, with the single species *S. multiflora*, and *Mucronatae*, with two species (*S. mucronata* and *S. pittieriana*). The differentiating characters between these groups are slight variations in the form of the disk and the mode of dehiscence of the anthers.

After studying a large number of specimens belonging to this alliance I found it hard to distinguish *S. pittieriana* from *S. multiflora*. The coriaceous leaves of *S. pittieriana* were also occasionally found in *S. multiflora*, and the disk characters were not clearly distinctive. *Salacia mucronata*, though closely related to *S. multiflora*, can be distinguished from the latter by a strictly dichotomously branched inflorescence with smaller-sized flowers. I consider it to be a subspecies of *S. multiflora*.

Tontelea ovalifolia (Miers) A. C. Smith, Brittonia 3: 476. 1940. Basionym: *Cuervea ovalifolia* Miers, Trans. Linn. Soc. London 28: 371. 1872.

TYPE: Colombia. Meta: Villa Vicencio, *Triana s.n.* (holotype, K).

Tontelea ovalifolia subsp. ***richardii*** (Peyr.) Görts & A. M. Mennega, comb. et stat. nov. *Salacia richardii* Peyr. in C. Martius, Fl. Bras. 11 (1): 148. 1878. Syn. nov. TYPE: French Guiana. *Richard s.n.* (holotype, P).

Salacia fluminensis Peyr. in C. Martius, Fl. Bras. 11 (1): 149. 1878. Syn. nov. *Tontelea fluminensis* (Peyr.) A. C. Smith, Brittonia 3: 477. 1940. TYPE: Brazil. *Riedel s.n.* (holotype, F; isotypes, GH, K, P, US).

According to Smith's (1940) classification, the three species cited above belong in the species group *Attenuatae*, together with several other species; in his key to this group, the three are placed close together. The main differences between the taxa occur in the shape of the leaves and the more or less immersed or prominulous venation. In his discussion on *T. ovalifolia*, Smith pointed out the great variation in leaf size, but he concluded that there was sufficient agreement in leaf shape and texture. Furthermore, he stated that specimens referred to this species and the following (*T. richardii* and *T. fluminensis*) are grouped only with difficulty. With the numerous collections received for identification from Central America and northern South America over a number of years, it became increasingly difficult to distinguish among the three species. Consequently, *T. richardii* and *T. fluminensis* are now placed under synonymy of *T. ovalifolia*. However, because the fruits show a remarkable difference in size and structure, two subspecies are recognized. Fruits of *T. ovalifolia* subsp. *ovalifolia* are of moderate size, 3–5 × 5 cm, and the pericarp is thin and leathery, whereas the fruits of *T. ovalifolia* subsp. *richardii* are very large and more or less globose, 8 × 10 cm, and the pericarp is woody, ca. 10 mm thick.

The holotype of *T. richardii* from French Guiana is a flowering specimen without fruits. Specimens with big woody fruits were collected in Panama, in the Canal Zone on Barro Colorado Island by several collectors, e.g., *Wetmore, Abbe & Shattuck 92, Shattuck 658*. Smith identified these collections as *T. richardii*, notwithstanding the distributional gap. Fruits of *T. fluminensis* were described by Riedel (ex Peyritsch, 1878) as "maximus, magnitudine capitis infantis," which agrees well with the *T. richardii* material. Among the scarce fruiting specimens recently collected is *M. Monsalve B 762* from Colombia, Valle del Cauca. This material has flowers and big, thick-walled fruits. It was first determined

as *T. fluminensis*, but is now considered to be *T. ovalifolia* subsp. *richardii*.

Salacia ulei Loes., Verh. Bot. Vereins Prov. Brandenburg 48: 178. 1907. *Tontelea ulei* (Loes.) A. C. Smith, Brittonia 3: 498. 1940. TYPE: Brazil. Amazonas: Rio Juruá, Marary, *Ule 5050* (holotype, B destroyed; photo of type, F; lectotype, selected here, G; isotype, L).

Salacia cuspidata A. C. Smith, Bull. Torrey Bot. Club 66: 248. 1939. Syn. nov. TYPE: Brazil. Amazonas: near Palmares, São Paulo de Olivença, *Krukoff 8415* (holotype, NY; isotypes, BM, F, K, S, U, US; paratype, same locality, *Krukoff 8255*, A, F, NY, S, U).

When Loesener (1907) described *Salacia ulei*, based on *Ule 5050*, he noted the unusual form of the disk. This disk consists of two parts: a low, thin outer ring, and an inner part that is higher and thicker. Such a disk had not yet been described in Brazilian species of *Salacia*, and Loesener doubted if *Salacia* was the correct genus.

In his treatment of New World Hippocrateaceae, Smith (1940) transferred *Salacia ulei* to *Tontelea*. He did not see the specimen, but based his decision on a photograph of the type and on Loesener's description. He regarded the double disk as "traumatic." If the double disk is not taken into account, the plant might indeed be accommodated in *Tontelea*, a genus with a cup-shaped disk. In *Tontelea*, however, the stigmas are usually well developed, whereas *Ule 5050* was described by Loesener as having a style with only minute stigmatic points. In Smith's (1940) treatment of *Tontelea*, there are five species that lack prominent stigmas. These were placed in the species group *Nectandrifoliae*. The *Ule* specimen was treated as *T. ulei* in this rather aberrant group. Smith also assigned several other collections to *T. ulei*: *Cardenas 1763* from Bolivia, and *Krukoff 4755* and *5141* from Amazonas, Brazil.

I studied the type specimen, as well as the other specimens cited above. The flowers of *Ule 5050*, in accordance with Loesener's (1907) ample description, show a disk consisting of two parts. At the time of Loesener's paper, such a disk was unknown in *Salacia*. In later collections, however, Smith noticed in three more species of *Salacia* a disk with a flat basal part and a conical inner part, very similar to the disk in *Ule 5050*; this was found each time combined with a branched inflorescence. He placed these species in his group *Arboreae* of *Salacia*. One of the species in this group, which includes five species in total, is *S. cuspidata* A. C. Smith. The type specimen of *S. cuspidata*, *Krukoff 8415*, resembles *Ule 5050* in several respects. In addition

to the identical disks, both collections share the absence of stigmas, the short-branched inflorescences, and the characteristic narrowly cuspidate leaf apex. Therefore, I consider the two collections as conspecific and belonging in *Salacia*, species group *Amplectentes* (Mennega, 1984).

Recent collections of *Salacia ulei* include: PERU. LORETO: Iquitos, *Asplund 14505* (S), *Vásquez 3373* (MO, U); Río Ucayala, *Vásquez et al. 7027* (MO, U).

As stated above, Smith also included a fruiting specimen, *Cárdenas 1763* (US), in *Tontelea ulei*. The leaves of this plant, however, lack the characteristic cuspidate apex of *Tontelea ulei*, and they much better resemble the leaves of *T. ovalifolia*. Therefore, I exclude this collection from *T. ulei*.

Krukoff 4755 (NY), a fruiting specimen, does not belong in *T. ulei* either. It has large concolorous leaves with an obtuse apex that in venation and texture suggests *Salacia cordata* (Miers) A. M. Mennega. The globose brownish fruits also agree with this species. The third collection, *Krukoff 5141* (A, NY), is a vine that is the type of *Salacia petiolata* A. C. Smith. This species was included in the synonymy of *Tontelea ulei* by Smith in 1940. From Smith's description and from my own observations of the only flower present on the sheet, it is

clear that this plant truly belongs in *Tontelea* and in the species group *Nectandrifoliae*, necessitating the new combination below.

Tontelea petiolata (A. C. Smith) A. M. Mennega, comb. nov. Basionym: *Salacia petiolata* A. C. Smith, Bull. Torrey Bot. Club 66: 242. 1939. TYPE: Brazil. Amazonas: basin of Rio Juruá, near mouth of Rio Embira, *Krukoff 5141* (holotype, NY; isotype, A).

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